



Remarks/Arguments:

Claims 1-28 are pending in the application and stand rejected under 35 U.S.C. § 103(a) based on the English language abstract of Hamaoka Koji et al. JP 09-088837, a published patent application in the Japanese language. It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Claims 1 and 8-28 have been amended. Applicants' invention as recited in amended Claim 1 includes a feature that is neither disclosed nor suggested by the art of record, namely:

... when a rotating speed commanded of the brushless DC motor is larger than the maximum rotating speed capable of being driven by the drive signal of the first waveform generating unit, ... the second waveform generating unit changing the frequency while keeping the PWM duty constant, and raising the rotating speed of the brushless DC motor to the rotating speed commanded.

(Emphasis added.)

In summary, when the commanded rotation speed of the motor is greater than the speed achievable with pulse-width modulation, the motor driving is switched from PWM to synchronous driving in order to achieve the commanded rotation speed. Hence rotation speeds are obtained which exceed the maximum obtainable with PWM alone. This feature is found in the originally filed application at page 10, line 21 thorough page 11, line 10. No new matter has been added.

In the cited art, by contrast, the goal is to maintain the rotation speed at the maximum obtainable with PWM, not to exceed it. When the speed drops below this maximum, the driving is switched from PWM to synchronous to restore this maximum speed.

It is because of the above quoted feature of Applicants' Claim 1 that the overall efficiency of Applicants' motor can be optimized as the load varies. See, for example, the Applicants' specification at p. 11, line 11 - p. 12, line 16.

Accordingly, for the reasons set forth above, Claim 1 is patentable over the art of record.

Similarly, Koji et. al do not teach or suggest the following feature of amended Claim 8:

. . . changing over from driving by the drive signal of the first waveform generating unit to driving by the drive signal of the second waveform generating unit when reaching the maximum rotating speed capable of being driven by the drive signal of the first waveform generating unit.

(Emphasis added.)

Again, in Koji, by contrast, the driving is switched to synchronous when the rotating speed falls below the maximum obtainable with PWM driving alone.

Accordingly, Claim 8 is patentable over the art of record.

Claims 2-7 include all the features of Claim 1, from which they depend. Amended Claims 9-28 include all the features of Claim 8, from which they depend. Therefore, Claims 2-7 and 9-28 are patentable over the art or record for at least the reasons stated above concerning Claims 1 and 8.

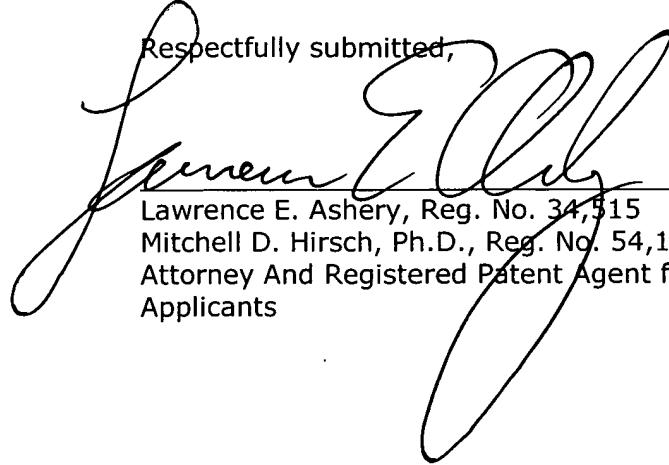
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In view of the amendments and arguments set forth above, the above identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,


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